



# EM PROGRESS

RECLAIMING THE PAST TO SECURE THE FUTURE

A REPORT FROM THE U.S. DEPARTMENT OF ENERGY'S OFFICE OF ENVIRONMENTAL MANAGEMENT

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## “We Will Revitalize This Program”

### A Message from Assistant Secretary Roberson on the Top-to-Bottom Review

When I released the results of the Top-to-Bottom Review of DOE's Environmental Management Program in January, I charted a course to reduce or eliminate, rather than manage, risks to human health, safety, and the environment. I am pleased to report that, in the weeks following the report's release, we have already taken steps to implement our plan for reforming and revitalizing the EM program.

The Top-to-Bottom Review calls for fundamental changes in the EM program. In addition to changing our focus from risk management to risk reduction and elimination, our plan calls for us to shift from processes to results, and to instill in this program the kind of urgency necessary to clean up and close down the nuclear legacy of the Cold War.

We have begun to work closely with our regulators, our elected officials, our communities, and our stakeholders to realize measurable progress. Our focus is on six key areas:

- Significantly improving the management of performance-based contracts;
- Moving EM into an accelerated risk-based cleanup strategy;
- Restructuring EM's internal processes to focus on the accomplishment of measurable cleanup and closure;
- Shedding scope and programs not aligned with or supporting accelerated risk reduction;
- Implementing an effective human capital strategy that extends beyond the next year;
- Restructuring the science and technology program to focus on the critical path and EM's highest and most urgent risks.



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## EM Budget Request Reflects New Priorities

On the surface, the Environmental Management Program's fiscal year 2003 budget request to Congress seems like business as usual. After all, the funding requested, \$6.7 billion, is nearly identical to last year's appropriation. But a closer look reveals a radical departure from business as usual. The FY 2003 budget request begins to put into place the findings of the Top-to-Bottom Review: that accelerated risk reduction, cleanup and closure are EM's core priorities.

Central to this new approach is a new appropriation – the EM Cleanup Reform Appropriation – that is critical to beginning implementation of the recommendations from the Top-to-Bottom Review. This new appropriation is designed to enable the Department, the States, and

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EM already has taken several steps to immediately implement its proposals for reforming and revitalizing this program. We have deployed special teams to most of our sites to work with DOE, our contractors, State and Federal regulators, and other stakeholders to develop revised cleanup plans. I am very pleased that at the Hanford site in Washington we have already reached an agreement that will enable us to significantly accelerate our work there and achieve enhanced risk reduction. I expect to achieve similar results at other sites over the next few months.

DOE has also taken the initial steps to align our internal processes and management to enable a streamlined and more focused approach to cleanup and closure. I have made numerous changes in the EM management structure as part of this effort. I have redeployed my senior management. EM has begun reviewing our contracts to ensure that they are effectively meeting our cleanup and closure needs. We have also begun reviewing existing systems and, where necessary, developing new systems for managing our contracts to ensure effective government oversight.

As far as we may have come to date, the unfinished work ahead of us is great. Most of the hardest work and the toughest challenges are still before us. The EM budget request for fiscal year 2003 contains key initiatives and tools we need to help us continue the work of transforming this program.

Our fiscal year 2003 budget request has two components – a base request and a new Cleanup Reform Account. This new account is proposed specifically to fund projects and activities at sites that achieve agreements with their states to enable accelerated closure.

This account is critical to the success of our efforts. To achieve our goals of accelerated risk reduction, we need new tools to jump-start this process. I believe our agreement at Hanford already demonstrates the efficacy of this approach and its potential for even greater results complex wide.

It is also our intent to look for more effective and efficient ways of achieving cleanup and risk reduction in the base budget request as well, with an emphasis on visible, tangible results for the money.

The EM mission is based on a simple premise: that DOE, Congress, the States and the communities that host DOE sites all want accelerated risk reduction and cleanup. The EM plan has put in place the first set of tools and instruments we need to achieve this mutual goal.

This is still a work in progress, but I am confident that we can, working together, be successful.

*Jessie Hill Roberson*  
Assistant Secretary for Environmental Management

For more information or to view the Top-to-Bottom Review report, visit the EM Web site at [www.em.doe.gov](http://www.em.doe.gov).

*EM Budget, continued from page 1*

the American taxpayer to begin realizing immediate benefits of alternative cleanup that will produce more real risk reduction, acceleration of cleanup, or much needed cost and schedule improvements.

The Administration is prepared to amend its budget request consistent with the funding needs of the agreements being developed with the States. If the \$800 million identified in the EM Cleanup Reform Appropriation is not sufficient, the Administration will support additional funding up to \$300 million, if needed, for cleanup reforms. Any site that reaches an agreement will receive a FY 2003 funding request at least equal to its FY 2002 appropriation, and in most cases, a funding request above the FY 2002 appropriation.

EM will work with regulators to agree on approaches that meet our mutual goals of achieving accelerated, risk-based cleanup that eliminates unneeded activities. Once agreement is reached and a new cost savings and funding profile is established for the acceleration or alternate cleanup strategy, funds will be made available from the Cleanup Reform Appropriation to fund or supplement existing funding from the base budget for the project.

This new appropriation will provide the stimulus necessary to reach agreement with States and regulators on new, more effective cleanup approaches and ensure that constant or greater funding levels are available to those States for cooperative efforts that lead to greater and faster risk reduction.

EM's \$5.9B base budget request continues to place the highest priority on protecting the health and safety of workers and the public at all DOE sites. It includes funding for ongoing activities such as surveillance and maintenance; accelerated cleanup and closure of Rocky Flats, Fernald and Mound; increased shipments to the Waste Isolation Pilot Plant; and ongoing cleanup projects being conducted in accordance with existing approaches and under existing agreements.

For more information on the EM budget, visit the EM Web site at [www.em.doe.gov](http://www.em.doe.gov).

# DOE Responds to the Tragedy

In the aftermath of the September 11 terrorist attacks on Washington, D.C. and New York City, the Department of Energy (DOE) responded immediately to the emergency relief efforts. The Department provided equipment and expertise that played a critical role in rescue and recovery, and cleanup efforts. Personnel and equipment from Brookhaven, Savannah River, Hanford and Oak Ridge, among other sites, aided in the efforts.

Brookhaven National Laboratory on Long Island dispatched firefighters trained in confined space rescue to the World Trade Center area, along with fire trucks, heavy rescue equipment and electrical generators. The firefighters assisted in the search for survivors in New York by using Ground Penetrating Radar equipment adapted with motion detection sensors.

The Savannah River Technology Center (SRTC), the Savannah River Site's applied research and development laboratory, dispatched employees with remotely operated equipment to assist with the search and rescue efforts. SRTC personnel assisted the Federal Emergency Management Agency and the NY Fire Department by providing much needed on-the-spot fabrication of unique technologies for use by the search and rescue teams. They brought infrared cameras, microphones, robotic equipment, fiber optic cameras and other tools to allow person-

nel to see and hear into confined spaces and areas too small or too dangerous for humans to enter. SRTC personnel also adapted technologies developed and used in site applications to apply to this effort. For example, they adapted a video camera device, originally designed to look into various nuclear facilities, to probe cavities below ground. They also adapted camera equipment to place on dogs that were sent into the cavities.

The Hanford Site pitched in to aid the relief efforts by donating more than 10,000 respirators desperately needed for search and rescue efforts in New York City. Cliff Ledford, administrator of the Fluor Hanford Safety Division's Respirator Protection Program said, "Once we got going, the whole thing snowballed. We're just glad that Hanford was able to pull together to help."

Oak Ridge National Laboratory sent a robot system, the MISR 2, which was originally designed to map radioactively contaminated facilities to assist with search and rescue operations. The MISR 2, a small tracked vehicle outfitted with video cameras and a gripper arm, is capable of searching for survivors among damaged and ruined structures.

Members of the Fernald Employees Athletic Association Softball League donated all their league's

earmarked prize money and awards for the immediate relief of victims and families affected by the tragedy. With the Fluor Fernald Foundation matching the league's donation dollar for dollar, Fernald employees raised more than \$11,000 in contributions. In addition, Fluor Fernald's annual United Way Campaign raised more than \$200,000 with \$43,000 going directly to the National Red Cross relief effort. Fluor Fernald Chairman and CEO John Bradburne remarked, "When there is a need, Fernald responds. It's that simple."

The events of September 11 left an indelible mark on the consciousness of Americans. As emergency relief poured in from around the country, the good will and hard work provided by DOE personnel in the wake of these acts of terrorism illustrates the solidarity the U.S. Government and its employees share with all of America.

For more information, visit the site office Web site at [www.em.doe.gov](http://www.em.doe.gov).



*Employees from the Fernald softball league present Fluor Fernald Chairman and CEO John Bradburne with a check for \$5,800.*



*SRTC's Frank Heckendorn (kneeling) adjusts the "Riley-cam" camera on famed rescue dog Riley for a search mission of the World Trade Center's debris.*

## Tribal Policy Reaffirmed

In a memorandum to all Department of Energy organizations, Secretary of Energy Spencer Abraham reaffirmed the Department's *American Indian and Alaska Native Tribal Government Policy*. "We must include Tribal participation in the decision-making process where our action may impact their environmental and cultural interests," said Secretary Abraham.

The policy, available on the Internet at <http://www.ci.doe.gov/indianbk.pdf>, summarizes guidelines for the DOE in its interaction and relationships with Federally recognized American Indian Tribes. The EM Program has many such interactions and relationships.

## SPOTLIGHT ON FERNALD

A former uranium production facility rapidly heading toward closure, the Fernald site in Ohio is safely completing one milestone after another in remediation and cleanup projects. More than 50 percent of the site's 1,050 acres has already been accepted as "certified clean" by the U.S. Environmental Protection Agency.

### *First Waste Cell Completed*

Fernald cleanup workers have completed construction of a multi-layer final cover for the first of seven cells to be used for the disposal of contaminated soil and demolition debris from Fernald's former uranium processing facilities.

DOE and Fluor Fernald are constructing an On-Site Disposal Facility (OSDF) as part of the site's long-term cleanup strategy for waste disposal. The strategy is a balance of on-site disposal of larger volumes of waste with lower contamination levels and off-site transportation and disposal of smaller volumes of waste with higher contamination levels.

The OSDF is designed to hold up to 2.5 million cubic yards of waste; approximately 85 percent will be soil and 15 percent will be demolition debris. When complete, most of the OSDF will be above ground to preserve the natural underlying clay layer and protect the underlying ground water. Each cell will be roughly 400 feet by 800 feet and have its own liner system made of multi-layer leak detection and wastewater collection systems.

The Cell 1 final cover is 8.75 feet thick and contains layers of natural clay and manmade plastic liners, as well as layers of 110,000 tons of stone and rock to prevent animals from burrowing and vegetation from taking root.

In September 2000, Cell 1 reached its design capacity of 314,000 cubic yards of material. Workers are currently seeding

and installing erosion control matting on Cell 1's final cover.

For more information, contact Rob Janke on (513) 648-3124 or at [robert.janke@fernald.gov](mailto:robert.janke@fernald.gov).

### *Workers at Fernald Complete High-Profile Remediation Project*

During nearly four decades of uranium metal production, tons of contaminated construction debris, boiler plant flyash and soil were dumped in the isolated area south of the site to make room for new structures. This area, called the Southern Waste Units, has been a high cleanup priority for DOE, EPA and the site's neighbors because it lies directly above the Great Miami Aquifer, one of Ohio's largest sources of drinking water.

In 1998, Fernald initiated the final cleanup plan for the Southern Waste Units. The plan involved characterizing the soil to determine contamination levels, excavating the contaminated portions of the soil and disposing the waste in Fernald's on-site disposal facility. During the three years of excavation, approximately 33,000 trucks carried more than 400,000 cubic yards of contaminated soil and debris from a 26-acre parcel of the Southern Waste Units to the disposal facility. That source of water contamination has now been eliminated.

"While our building demolition tends to receive most of the attention, elimination of this

environmental threat has the most direct impact on the health and safety our neighbors," says Johnny Reising, DOE associate director of site cleanup. "Our ground water monitoring currently shows the uranium contamination levels at about 50 parts-per-billion beneath the Southern Waste Units, which is down significantly from the original 2,000 parts-per-billion levels. Removal of the source, infiltration of clean rainwater, and aggressive pumping have helped to drive the contamination down."

Fernald will begin ecological restoration (grading and seeding) of the Southern Waste Units area this year. The restoration

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*An operating engineer loads one of approximately 33,000 truckloads. A teamster then drove the waste material to Fernald's On-Site Disposal Facility. During this loading activity a laborer applies water to the soil to control fugitive dust emissions.*



*Workers in the Southern Waste Units transferred more than 400,000 cubic yards of material to Fernald's On-Site Disposal Facility.*

## SPOTLIGHT ON FERNALD

### Spotlight, continued from page 4

project will create additional floodplain for a local stream and expand the wooded corridors along it. The upland portion of the project site will be revegetated with native trees, shrubs, grasses and wild flowers similar to other site restoration projects.

For more information, contact Rob Janke on (513) 648-3124 or [robert.janke@fernald.gov](mailto:robert.janke@fernald.gov)

### Decontamination and Dismantlement Activities Continue

Decontamination and Dismantlement (D&D) activities continue at Fernald—the most recent D&D activities were focused on the site's 223,000 square feet former Metals Fabrication Plant. Removal of exterior transite and structural steel demolition was completed early this winter. This was the sixth of 10 major plants that have been removed from Fernald's skyline. Workers have now turned their attention to the Ore Refinery and Scrap Recovery plants.

For more information on D&D projects, contact John Trygier on (513) 648-3154 or at [john.trygier@fernald.gov](mailto:john.trygier@fernald.gov).

### Workers Achieve New Safety Record

Fernald employees' personal commitment to safety has paid off for the former uranium production facility. On November 26, 2001, after working safely for 1000 days, Fernald workers reached more than 10 million safe work hours without a lost-time injury or accident.

Over the past year, Fernald has earned local and national recognition for its safety program. The site was awarded the VPP Star Status from the DOE Office of Environment Safety and Health, and the Greater Hamilton Safety Council presented several awards to the site for the

best industrial safety record and the lowest incident rate.

For more information, contact David Kozlowski on (513) 648-3187 or at [david.kozlowski@fernald.gov](mailto:david.kozlowski@fernald.gov).

### National Academy of Science Visits Fernald and Mound

In early November 2001, the National Academy of Sciences/National Research Council Committee on Long Term Institutional Management at DOE Legacy Waste Sites visited Fernald and Mound to discuss issues related to long-term stewardship (LTS).

At both sites the committee members received presentations from DOE and site contractor personnel regarding physical drivers for cleanup, LTS plans, hazards and risks associated with the cleanup remedies, goals for cleanup and LTS, and progress measurements. Committee members also received in-depth tours of Fernald and Mound and met with local stakeholders at both sites.

According to Dr. Kai Lee of Williams College, chair of the committee, the group is "looking at how to improve plans for long term stewardship at DOE sites that can't be released for unrestricted

use because of contamination that will remain after current cleanup efforts are done."

Ultimately, the committee will issue recommendations for improving plans for long-term institutional management across the complex. As Dr. Lee puts it, "We came to learn about the technical and institutional aspects of long term stewardship, as well as how the various groups on site and in neighboring communities define stewardship, at two sites that are among the furthest along in their thinking on these issues."

At Fernald, members of the public related their history of involvement with Fernald. The citizens emphasized the positive nature of their current relationship with DOE-Fernald and the contractor, Fluor Fernald, but also indicated their concerns for stable cleanup funding.

The committee will be visiting other major EM sites in the near future, after which they will formulate their recommendations.

For information about the NAS/NRC visit to Fernald, contact Gary Stegner on (513) 648-3153 or at [gary.stegner@fernald.gov](mailto:gary.stegner@fernald.gov).



*Johnny Reising, DOE-Fernald Associate Director, uses an aerial photo to describe the physical drivers for cleanup at Fernald to the NAS/NRC Committee members.*

# EM Reuses Nuclear Materials, Saves Money

To assist sites with disposition of their large inventories of surplus nuclear materials, the EM Nuclear Materials Stewardship Program has developed four "Nuclear Material Management Groups." For the past two years, these groups have found reuse opportunities and methods for the disposal of discarded items, saving millions of dollars.

The Nonactinide Isotopes and Sealed Sources Management Group at Albuquerque assisted Mound in transporting ionium ampoules to the Oak Ridge National Laboratory for recovery of the valuable radioisotope protactinium for research, saving approximately \$200,000 for Mound.

To date, the Uranium Management Group at Oak Ridge has consolidated approximately 4,000 metric tons of blendable-quality uranium from Fernald,

Hanford, and five universities and sent it to Portsmouth, saving more than \$20 million for these sites.

The Plutonium Management Group at Savannah River is assessing all complex-wide surplus plutonium inventories in support of stabilization and packaging campaigns. In addition, the Heavy Isotopes Management Group of Oak Ridge assisted the Pacific Northwest National Laboratory in shipping depleted uranium oxide crystals to Oak Ridge, and provided similar assistance to Rocky Flats, the Lawrence Berkeley National Laboratory and Lawrence Livermore National Laboratory.

For more information, contact John C. Tseng on (301) 903-4482.



*Ionium ampoules with protactinium (231Pa) being loaded onto shipping cask at Mound for shipment to ORNL*



*Uranium material containers stored at the Portsmouth site. All of these materials are suitable for future blending operations to produce usable enriched uranium.*

## Nature Teams with EM to Remove Tritium from SRS

Phytoremediation, the use of native plants to clean up contaminants, has been used successfully to reduce tritium concentrations at the Savannah River Site (SRS). SRS expected this environmentally friendly cleanup method to reduce tritium discharges by 25 percent to a nearby stream. After one year of operation, the tritium discharges have actually been reduced by 84 percent.

SRS's southwest plume is one of four ground water plumes contaminated by

tritium, but because its drainage eventually flows into a nearby stream, it was considered the most serious.

SRS developed an interim plan, called the Tritium Phytoremediation Project, to reduce the amount of contaminated seepage from reaching the stream. The project involved constructing a dam, five to seven feet high and 340 feet wide, of metal sheet piles, positioned to intercept seeping ground water with the highest concentrations of tritium.

The dam formed an artificial pond and an irrigation system has been employed to pump water from the pond to the forested areas that consume the water by absorption and evapotranspiration.

The trees and other subcanopy plants take up the tritium-contaminated water through their root systems and release trace amounts of tritium to the atmosphere through their foliage. Dose studies indicate that tritium releases from the irrigated forest are well below regulatory standards.

Phytoremediation has proven to be less expensive than mechanical water treatment systems and is useful for a wide variety of contaminants. The Department of Energy continues to use phytoremediation at several of its sites to degrade, contain and stabilize pollutants in soil and water.

For more information, contact Ron Beul at [ronald.beul@srs.gov](mailto:ronald.beul@srs.gov).

# Amchitka Island Cleanup Draws to a Close

Despite howling winds, three minor earthquakes, and drenching rains, the fieldwork on Amchitka Island, Alaska is complete. From May to December 2001, the Department of Energy's National Nuclear Security Administration Nevada Operations Office (NNSA/NV) remediated surface contamination on the island remaining from historic underground nuclear testing activities.

Amchitka Island is a small, uninhabited island about 1,340 miles southwest of Anchorage, near the western end of the Aleutian Islands. It is now part of the Alaska Maritime National Wildlife Refuge, but was once used by the U.S. Atomic Energy Commission, predecessor

agency to the DOE, to conduct three underground nuclear tests.

Twelve mud pits were capped to isolate contaminated drilling mud from the environment. Water that had accumulated on the mud pits from rain and snowmelt was pumped off and treated to meet State of Alaska discharge standards. Sixteen shallow ground water-monitoring wells were also closed. Two underground storage tanks were closed in place.

The base camp, constructed in May 2001 to support cleanup workers, was dismantled in September 2001. All equipment and cargo were transported off the island.

The success of the project can be attributed to the teamwork and collective con-

tributions of the government agencies and contractors involved. Extensive planning and adaptable onsite management ensured that the project was completed within cost and schedule parameters while guaranteeing the safety of all personnel.

At a public meeting held in Anchorage, Alaska in December, the public was updated on the 2001 remediation efforts. More than 30 people attended the meeting to talk, listen and learn more about the summer's activities. Questions and comments focused on issues related to the specific work that was performed, worker health and safety, and future NNSA/NV activities regarding the island. Meeting attendees expressed appreciation for the NNSA/NV's efforts to communicate with them on these matters.

For more information, contact Monica Sanchez on (702) 295-0160.

## Hanford Environmental Restoration Contractor Team Has a Productive Year

The Environmental Restoration Contractor (ERC) team at the Hanford site has completed a busy and successful year. Not only have they removed and disposed of an estimated 125,000 tons of contaminated soil and debris but they have also managed to cap 90 wells in the Columbia River corridor.

Greg Mitchem, Ground Water/Vadose Zone Integration Project Manager, says, "We can't remove the wells, but we can



*Crews fill the abandoned wells with sand to the top of the water table. The hole containing the decommissioned well is then back filled with soil.*

decommission them in a manner that protects the environment and maintains the scenic beauty of the Hanford Reach."

ERC's work to cap 90 decommissioned wells was completed one month ahead of schedule in spite of the high temperatures and dry weather.

Each well was filled with sand to the top of the water table, then filled with grout to three feet below ground level. Once encased, the top por-

tion of the well was removed, then capped with a brass survey marker and the hole filled with soil.

The soil disposal project, begun in July 2000, focused on the removal of the N-3 crib and N-3 trench, connected to the N Reactor, which was shut down in 1987. The concrete-covered cribs and trenches were used to dispose of liquid from the reactor's fuel-storage basin and water-based cooling systems. They were designed to absorb liquid waste through layers of gravel, sand and soil before it could reach ground level.

Workers used a remote-operated diamond saw to cut the cover into removable rectangular panels. The panels were remotely clamped down and lifted with a large

**Hanford, continued on page 8**

# Energy Secretary Visits PNNL and Hanford; Extends PNNL Contract

During a November visit to Hanford and the Pacific Northwest National Laboratory (PNNL), Energy Secretary Abraham announced the Department's intention to move forward with plans to extend its contract with Battelle to manage and operate PNNL in Richland, Washington.

"Battelle has done an extraordinary job operating PNNL over the years," Secretary Abraham said, citing three years of "Outstanding" performance ratings as a key factor in his decision. "The Department of Energy and Battelle will be negotiating the details over the next several months, but we look forward to a continued partnership that will lead to further scientific advances benefiting our country."

Battelle has held the contract to operate the Laboratory since its inception in 1965.

For more information, contact Geoff Harvey on (509) 372-6083 or visit the PNNL Web site at [www.pnl.gov](http://www.pnl.gov).

## Science Program Awards \$39 million in Research Grants

During his visit to the PNNL, Secretary Abraham announced that the Department's Environmental Management Science Program has awarded the Laboratory \$8.4 million to conduct research in support of DOE's Environmental Management cleanup program.

The grants made to PNNL are part of 45 awarded by the Science Program. The grants, totaling more than \$39 million, are awarded to laboratories, universities and research institutions nationwide.

The grant will fund research to help develop creative new approaches in dealing with the disposition of high level waste and the safe deactivation and decontamination of facilities. PNNL will

lead 11 projects and collaborate on five others.

The research should help achieve a reduction in waste processing costs and final waste form volumes, develop better methods to decontaminate metal and concrete surfaces, and improve upon established pretreatment and waste separations processes.

Other DOE facilities that will benefit from the grants program, now in its sixth year, include the Lawrence Livermore National Laboratory and Lawrence Berkeley National Laboratory in California, the Idaho National Engineering and Environmental Laboratory in Idaho, the Argonne National Laboratory in Illinois, the Los Alamos National Laboratory and Sandia National Laboratories in New Mexico, the Savannah River Technology Center in South Carolina, and the Oak Ridge National Laboratory in Tennessee.

For more information on PNNL's projects, contact Geoff Harvey on (509) 372-6083. For more information on the other projects, contact Dolline Hatchett on (202) 586-5806 or visit <http://emsp.em.doe.gov>.



*Secretary Abraham congratulates PNNL Director Dr. Lura Powell following the announcement of the Department's intention to extend Battelle's PNNL contract.*

## Hanford, continued from page 7

crane. The workers devised a system that used electric winches to maneuver the panels, which improved safety and reduced radiological doses and potential contamination.

"It is extremely rewarding to see workers taking the time to care for the welfare of each other and develop creative on-site techniques to get the job done in a safe and efficient manner," says DOE facility representative Cliff Ashley.

For more information, contact Mike Talbot at [Michael\\_L\\_Talbot@rl.gov](mailto:Michael_L_Talbot@rl.gov).



# Probing for Answers in Idaho: What Lies Beneath?

Scientists and engineers at the Idaho National Engineering and Environmental Laboratory (INEEL) are using new tools to figure out what wastes lie buried beneath the Idaho desert, and what that waste is doing today. These tools can investigate and characterize buried radioactive and hazardous waste sites without retrieving samples, exposing personnel to contaminants, or generating any new waste streams.

From 1954 until 1970, transuranic wastes, low-level radioactive and non-radioactive hazardous wastes were buried in pits and trenches at the INEEL's Radioactive Waste Management Complex.

The Snake River Plain Aquifer, which serves southern Idaho's agricultural community, underlies the INEEL. While water monitoring programs conducted by the INEEL, the U.S. Geologic Survey, the State of Idaho INEEL Oversight, and a separate, independent contract for environmental monitoring all indicate the water is safe, the new tools will determine if contaminants are migrating and could eventually threaten the aquifer.

One of the first tools employed was the Multi-instrument Probe, a sealed casing

into which logging tools are inserted to detect water, organic, and transuranic wastes in the burial area. The probe casing consists of a 6-inch steel pipe with a sealed bottom that is driven into the ground. Leaving the casing in place eliminates the transport of contaminants to the surface, avoids worker exposure, and minimizes secondary waste generation.

In addition to traditional logging tools, INEEL demonstrated and deployed two new data logging tools—the Prompt Fission Neutron (PFN) and the Advanced Neutron-Gamma (NG) tools—which were inserted into the probe casing. The PFN is designed to detect fissile materials in the subsurface, while the NG tool measures a wide range of elemental concentrations.

These tools used at INEEL are helping to answer the questions about contaminants and buried waste — what is really there, in what concentrations, and are they moving? As the reliability and accuracy of these tools is proven at the INEEL, they can then aid in characterizing and under-

standing contaminants at a number of other DOE and industrial sites.

For more information, contact Kevin O'Neill on (208) 526-5455.



*The probe casing is driven into the ground by the INEEL's ResonantSonic™ drill rig that does not require drilling mud or bringing cutting material to the surface, as with standard auger-type drilling.*

## INEEL Uses Corporate Funded Research and Development for Mound Cleanup

A provision in the INEEL management and operating contract is paying big dividends for DOE's Mound site in Ohio. When DOE agreed to a contract stipulation requiring corporate reinvestment, a percentage of Bechtel BWXT Idaho's

annual fee was set aside for Corporate Funded Research and Development.

According to INEEL engineer Tom Bechtold, "BWXT decided its portion of these funds would be used to share INEEL's

environmental management technologies and cleanup expertise with BWXT-managed sites, like Mound, since we share common management ties. And the receiving party doesn't pay for it."

INEEL and Mound engineers have worked on several initiatives to help clean up and close Mound before transferring the land to the city of Miamisburg. One

INEEL Uses, *continued on page 10*

# DOE Responds to Stewardship Concerns

As cleanup of some Department of Energy (DOE) sites ends, a new phase in environmental management begins. Long-term stewardship of the sites is necessary because cleanup and waste management operations will not restore all lands and structures to conditions that would allow unrestricted usage. Recognizing this, DOE has taken the initiative to improve the planning for and implementation of long-term stewardship at many sites. Protection of human health and the environment is paramount in the long-term stewardship effort, and the DOE approach has included the continual involvement of the concerned public along the way.

## *Final Long-term Stewardship Study Available*

One result of this long-term stewardship planning partnership is the *Final Long-term Stewardship Study*. The study identifies programmatic issues and information DOE should consider while planning for and implementing its long-term stewardship activities. As each site represents unique challenges, the study also summarizes issues to be considered as decisions develop regarding ultimate cleanup goals at each site.

The *Final Study* reflects changes to the *Draft Study* made in response to public comments. This document highlights public input on the Department's planning, funding, and stakeholder involvement processes in establishing and addressing long-term stewardship needs.

Copies of the *Study* and other relevant long-term stewardship information are available at the Environmental Management Web site, [www.em.doe.gov/lts](http://www.em.doe.gov/lts). Paper copies may be ordered from the Center for Environmental Management

Information on (800) 736-3282 or via email at [eminfo@cemi.org](mailto:eminfo@cemi.org).

For more information, contact Letitia O'Connor on (202) 586-6570.

## *Draft Strategic Plan to Be Released*

While the *Final Long-term Stewardship (LTS) Study* outlines the stewardship issues that should be considered as sites move towards closure, DOE's *LTS Strategic Plan* will detail concrete objectives and plans for carrying out the stewardship activities. The *Plan* will lay out the strategy for managing post cleanup and/or post closure responsibilities. The *Plan* will offer a cost-effective way to protect human health and the environment through the coordination of a range of activities.

As the activities for a given site depend on the site conditions and residual hazards, specific remedies must be developed. The *Strategic Plan* is a starting point on the path toward building workable long-term stewardship strategies into the way the Department does business. The strategic planning process provides an opportunity for DOE to collaborate with Federal, state, local and Tribal governments and the public on the development of a longer term vision for this effort. It will provide built-in performance metrics for measuring progress and identifying successes as well as areas for improvement.

Together these two documents detail the Department of Energy's goals and direction in conducting long-term stewardship at its sites.

The draft *Strategic Plan* will be available for review and public comment early this spring. The plan is scheduled to be finalized this summer.

For more information, contact Gregory Sullivan on (202) 586-0771.

## *INEEL Uses, continued from page 9*

initiative involved an INEEL-developed strategy for determining Mound's unique wastes and disposing of them, and describing industrial health work controls in a contaminated area.

A second initiative incorporated using an INEEL-engineered robot system to demolish a separations cell. A third initiative established a consistent method of planning out year cost and waste volume estimates for Mound's Decontamination and Decommissioning Program.

As Mound project manager Don Krause says, "benefiting from INEEL's Corporate Funded R&D program is like having a supporting arm to lean on since we are a closure site with limited research capabilities."

He adds that, "for a closure site like Mound to have free access to one of DOE's Environmental Management Core Laboratories and its capabilities—it has been unbelievable."

INEEL is looking for opportunities to fully utilize and enhance its technical capabilities at other BWXT-managed sites around the complex including Pantex, Savannah River, Oak Ridge, Sandia, and Hanford.

For more information, contact Reuel Smith on (208) 526-3733 or visit the INEEL Web site at [www.inel.gov](http://www.inel.gov).

# Decontamination and Decommissioning Activities Heat Up in Ohio

With its goal of completion of decontamination and decommissioning activities by 2006, the Battelle Columbus Laboratories Decommissioning Project (BCLDP) team in Ohio has made significant progress in removing the last vestiges of an atomic energy program dating back to World War II.

The laboratory initially signed on with the Manhattan Engineering District in 1943. Over the following four-plus decades, areas in nine Battelle buildings and surrounding grounds in Columbus and in six buildings at the West Jefferson site became contaminated with varying amounts of radioactive materials. Since

1989, the Columbus buildings have been cleaned and restored for the most part, and work has concentrated on the more heavily contaminated structures in the West Jefferson site.

Among the tasks completed recently, workers have dismantled a reactor pool and bioshield that protected a research reactor, pressure-washed equipment, and packaged by remote means hot cell radioactive wastes in yet another facility. Also, BCLDP personnel are removing materials from a high-energy cell and disassembling other cells at the West Jefferson site.

As this work moves forward, personnel are employing a host of new technologies. Innovative techniques include the Wide and Selective Separation Cartridge, a transuranic waste laundry system, a diamond wire saw and a Pipe Explorer surveying system. The advanced equipment and techniques are saving time and money for the Department of Energy, which pays for 90 percent of the cleanup.

In addition to the facility work, the project is conducting a variety of environmental remediation efforts on land surrounding the West Jefferson site.

For more information, contact Thomas Baillieul at [Thomas.A.Baillieul@ohio.doe.gov](mailto:Thomas.A.Baillieul@ohio.doe.gov).

## Who are you gonna call? .....P2!

Meeting a cleanup schedule and positioning wastes with no disposal options is a daunting task. Rocky Flats personnel requested the assistance of the Pollution Prevention (P2) Expert Team to identify treatment alternatives for approximately 500 gallons of Transuranic (TRU)-contaminated waste oils stored at the site, which are not only a safety issue but require stringent monitoring and inspections.

The P2 Expert Team utilizes experts to target a specific problem and apply new or innovative methods that will reduce costs and save time. To date, the Team has worked at eight DOE sites and has successfully identified alternative approaches to baseline environmental restoration, decommissioning, and waste disposition techniques, resulting in significant cost savings.

The P2 team explored the use of a potential treatment called the NoChar Petro Bond® Absorbent Polymer, which has been used successfully at the Mound Environmental Technology Site. The NoChar technology binds-up the liquids, and tests show that it appears to reduce or eliminate the hydrogen and flammable organic gases generated by the treated waste. If successful, the new technology will reduce the volume of waste, produce a WIPP-acceptable waste form, allow Rocky Flats personnel to process the oils in a containment tent, and shorten the sched-

ule to ship treated waste oils to WIPP by several years.

For more information, please contact Greg McBrien on (301) 903-1385.



*In the resulting waste product from the mixing of the TRU waste oil with the NoChar Polymer®, no free liquids are noticeable.*

## SITE SHORTS...SITE SHORTS...SITE SHORTS

## *Rocky Flats Removes More Waste than Ever*

Workers at the Rocky Flats Environmental Technology Site removed more waste during Fiscal Year 2001 than any other year since the site began its cleanup and closure mission.

"Rocky Flats has accomplished more real cleanup and waste transport than anyone would have thought possible a few years ago," says Hank Dalton, Department of Energy Assistant Manager for Projects.

In Fiscal Year 2001, Rocky Flats sent 162 shipments of TRU waste to WIPP for disposal, and 264 truckloads of LLW were shipped to the Nevada Test Site.

For more information, contact Patrick Etchart on (303) 966-7547.

## *No Longer the Most Dangerous Building in America*

Once called "the most dangerous building in America," Building 771 at the Rocky Flats Environmental Technology Site is now in compliance with the Mixed Residue Consent Order. The Colorado Department of Health and Environment (CDPHE) mandate was to drain and remove all mixed residue liquid waste and piping by December 31, 2001. Workers have completed the draining and removal, including more than 2,000 liters of radioactive liquids and 31,000 feet of piping, four months early.

Because of its hazards and proximity to major population areas, Building 771 is undergoing accelerated decommission-

ing. Building 771 is slated for demolition in 2004.

For more information, contact Patrick Etchart on (303) 966-7547.

## *DOE Transfers Grand Junction Site to Community*

More than four years after the U.S. Department of Energy (DOE) Headquarters issued a plan to reduce the Department's mortgage across its complex, the DOE Grand Junction Office (GJO) site in Colorado officially transferred to private ownership effective October 1, 2001. DOE signed a quitclaim deed providing title to approximately 46 acres at the DOE Grand Junction Office site to the Riverview Technology Corporation (RTC).

Since 1997, DOE has been working with RTC and its predecessor commission on redevelopment opportunities for the Grand Junction site.

"This has been a long and involved process and we are happy to finally see it come to a productive end," says Donna Bergman-Tabbert, DOE-GJO Manager.

To manage contamination that will remain onsite after transition, DOE submitted a Request for Deferred Remediation to the State of Colorado. Simultaneous with transfer of site ownership, DOE also signed a lease with the RTC for space at the GJO site for its ongoing missions.

For more information about the transition of the DOE-GJO to private ownership, contact Donna Bergman-Tabbert on (970) 248-6001.

## *National Academy Evaluates DOE's Plans*

Representatives from the National Academy of Science visited the Battelle Columbus Laboratories Decommissioning Project (BCLDP) on a fact-finding mission to review and evaluate the Department of Energy's plans to characterize remote-handled transuranic waste (RH-TRU) to be disposed of at the Waste Isolation Pilot Plant.

The waste is a critical part of the decontamination project at BCLDP, which is expected to generate RH-TRU that must be packed in special containers and shipped to WIPP. The shipments are part of an overall effort to decontaminate and remediate nuclear research buildings and associated grounds to levels of residual contamination allowing future use without radiological restrictions.

The National Academies study will provide recommendations for improving the DOE plan's technical soundness, maintenance of worker safety, and compliance with applicable regulatory requirements.

For more information, contact Thomas Baillieul at [Thomas.A.Baillieul@ohio.doe.gov](mailto:Thomas.A.Baillieul@ohio.doe.gov).

## *Savannah River Earns Star of Excellence*

The Savannah River Site received the DOE Voluntary Protection Plan Star of Excellence Award, the newest and highest VPP honor given to a DOE facility, because the site achieved annual DOE VPP goals and demonstrated a strong involvement in VPP mentoring

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Site Shorts, *continued from page 12*

and outreach programs. The Star of Excellence is awarded when injury/illness incidence rates and lost workday injury/illness rates are at least 75 percent below the Bureau of Labor Statistics national average for standard industrial classification.

For more information, contact Bill Taylor on (803) 725-2889.

## *Savannah's Dr. Corey Receives Award of Distinction*

Dr. Jack Corey of the Savannah River Technology Center received an Award of Distinction from the University of California, Davis, in recognition of his contributions to its College of Agriculture and Environmental Studies.

Dr. Corey is affiliated with the DOE Office of Environmental Management, Office of Science and Technology's national Research and Development program. He manages the Subsurface Contaminants Focus Area's "lead laboratory" where he continually addresses technical issues for cleanup operations. As an inventor, Dr. Corey is one of three scientists who adapted horizontal well technology to environmental remediation for cleanup of ground water and soils, which is estimated to save 40 percent of baseline treatment costs. He is also an active public servant. Affiliated with the Savannah River Site for 35 years, Dr. Corey continues his work with the lead laboratory program.

For more information, contact Claire Sink on (301) 903-7928.

# WIPP Accomplishments

## *Process Improvements and Coordination Increase WIPP Shipping and Disposal Rate by 1,300 Percent*

During the week of August 27, 2001, the Waste Isolation Pilot Plant (WIPP) received and disposed of 14 shipments of transuranic waste—the highest one-week volume handled at WIPP since the repository began operations on March 26, 1999.

The significant increase from a rate of one-to-two waste shipments per week to WIPP in 2000 stems from a challenge to DOE and contractor personnel by Carlsbad Field Office Manager Dr. Inés Triay. She challenged the WIPP team to achieve a level of 17 shipments per week in 2001, while maintaining high safety standards.

The team responded with major improvements in the waste handling process—taking the process from seven hours to three, standardizing and streamlining of loading practices at waste generator/storage sites, and reducing turnaround time for trucks and TRUPACT-II shipping containers—unloading trucks and containers and getting them back on the road in the same day.

With the streamlined process, WIPP was poised to reach its first 17-shipment week in September 2001. The temporary halting of shipments in the wake of the September 11 terrorist attacks meant putting off achievement of that milestone. Nonetheless, WIPP and transuranic waste generator sites such as the Rocky Flats Environmental Technology Site, Idaho National Engineering and Environmental Laboratory, Los Alamos National Laboratory, Savannah River Site and Hanford are working together toward a loftier goal—24 shipments per week to WIPP in 2002.

## *WIPP Wins Again!*

Since operations began at the WIPP, Westinghouse TRU Solutions LLC (WTS), the management and operating contractor at the site, has been repeatedly recognized for safe operations. Most recently WTS has earned a "Superior Star" Award as well as its 15th consecutive mine safety award.

"Superior Star" status was awarded to WTS for its ongoing safety performance with the Voluntary Protection Program (VPP). For a site to be recognized under this program it must report injury/illness rates and lost-time workday rates at least 50 percent below the Bureau of Labor Statistics national average. Westinghouse earned its initial VPP star status in October 1994, the first DOE site to acquire such status.

The New Mexico Mining Association presented Westinghouse with its 15th consecutive award in the category of "large, non-producing mine," for excellence in underground operations and an outstanding safety record at WIPP.

## *WIPP's First Section Reaches Capacity*

August 24 began just like any other day in the hot desert sun of Carlsbad, New Mexico. WIPP personnel placed a shipment of transuranic waste in Room 7 of Panel 1. After placement, they announced that the room had reached capacity, a milestone that represents 352 shipments from five DOE sites, totaling 10,089 drums of waste.

For more information, contact the WIPP site on (800) 336-9477 or visit the Web site at [www.wipp.carlsbad.nm.us](http://www.wipp.carlsbad.nm.us).

## SSAB SPOTLIGHT

### *Rocky Flats Citizen Advisory Board Gets Involved in the Community*

The Rocky Flats Citizens Advisory Board began operation in 1993 as one of DOE's first Environmental Management Site Specific Advisory Boards (SSABs). Currently with sixteen members, the Board represents a cross-section of the Denver metropolitan community including business, academic, environmental, social justice, health industry, local government, and community member interests. Since its inception, the Board has developed 85 recommendations on a wide range of environmental restoration, waste management, and other site closure topics.

Besides providing recommendations, Board members also take an active interest in public information and participation. The Board's major outreach tools include a speaker's bureau featuring a slide show about Rocky Flats and the Board's activities, a quarterly newsletter

with a mailing list of more than 3,500 recipients, and a Web site.

A major activity for the Board during the past year has been to examine issues and develop a recommendation related to establishing soil cleanup levels for radioactively contaminated soil at Rocky Flats, officially designated as Radionuclide Soil Action Levels, or RSALs. First set on an interim basis in 1996, the RSALs have generated much interest in the community for fear that they were not protective enough. Since that time, the Board requested and received a \$500,000 grant from DOE to commission an independent analysis of the RSALs. This analysis recommended a significantly lower RSAL number than originally proposed by DOE and its regulators. Another review by DOE began in 2000 that should conclude by the spring of 2002. The Board intends to follow very carefully the implementation of whatever cleanup levels are chosen in 2002 and beyond.

Another focus for the Board is long-term stewardship and the end-state for Rocky Flats. When the Rocky Flats site achieves closure in 2006 or thereafter, the Board is committed to the concept

that as little contamination as reasonably possible should remain behind, and that a long-term stewardship program be in place that will protect both current and future generations from whatever residual contamination is left. The Board plans a series of end-state discus-

sions in 2002 and hopes to engage as many members of the community as possible.

For more information about RFCAB, its members and activities, visit the Board's Web site at [www.rfcab.org](http://www.rfcab.org). To learn about EM's Advisory Board program, visit the EM Web site at [www.em.doe.gov](http://www.em.doe.gov).

### *Savannah River Hosts SSAB Ground Water Workshop*

The local Site Specific Advisory Board (SSAB) at Savannah River Site in Aiken, South Carolina hosted the Environmental Management (EM) SSAB Ground Water Workshop the first weekend of February 2002.

The workshop was designed for stakeholders who are actively involved in the remediation of the EM Complex. It aimed to improve stakeholder understanding of ground water cleanup and technology issues, to foster dialogue among local SSABs about common ground water issues and concerns, and to provide joint recommendations toward resolution of those concerns.

Representatives from all nine local SSABs attended the workshop. Core topic areas discussed included ground water technology, regulatory issues, communication/public participation and stewardship of ground water. Participants drafted statements that identified issues of importance to stakeholders to help EM decision-makers as they continue to consider ground water-related resolutions.

For more information on the workshop or other SRS CAB activities, contact Dawn Haygood on (800) 249-8155 or visit the SRS CAB Web site at [www.srs.gov](http://www.srs.gov).



*RFCAB members receive a briefing from Rocky Flats site personnel at a recent tour of the facility.*

# DOE Reaches Out to Its Community and Beyond...

## Environmental Forum at Savannah State University

The Savannah River Site's (SRS) commitment to working with its surrounding communities was reiterated recently when SRS and the Savannah State University (SSU) sponsored an Environmental Forum held at SSU in Savannah, Georgia.

Among the approximately 100 attendees were citizens including business and industry leaders and workers, state and local elected officials, local governmental agencies, environmental justice communities, and students and faculty from the university.

The Educational Forum included an overview of SRS and its current and future missions, environmental monitoring at the site and of the Savannah River, and the site's environmental remediation efforts that have significantly reduced the potential for environmental discharges.

Dr. Mildred McClain, Executive Director for Citizens for Environmental Justice, presented Greg Rudy and Tom Heenan from DOE-SRS and Bob Pedde from Westinghouse Savannah River Company with awards of recognition and apprecia-



*Dr. Mildred McClain presents DOE-SRS managers Greg Rudy and Tom Heenan with awards appreciating their continued support of environmental justice.*

tion for their support of the Environmental Justice Program throughout the communities around and downstream of the Savannah River Site.

In 1998, SSU began receiving funds through the Environmental Waste Management Education and Community Involvement Grant from the U.S. Department of Energy/Environmental Protection Agency. This grant is a partnership between SSU and the Citizens for Environmental Justice, a community-based organization. The main objective of the project is to educate students and the communities about environmental management issues.

For more information, contact Bill Taylor on (803) 725-2889.

## Border Technology Partnership Program Makes Progress in First Year of Operation

The National Border Technology Partnership Program, led by the U.S. Department of Energy's Carlsbad Field Office, had significant accomplishments in its first full year of operation.

The Program, established to address public health and environmental issues along the U.S.-Mexico border, focuses on the sharing and deployment of innovative technologies, with an overall goal of helping to improve the border region's environmental and public health problems.

Technological advances tested during this first year include a method for quickly modeling the dispersion of airborne toxins, use of recycled tires to safely produce energy, and electromagnetic radiography that locates and identifies underground plumes of hazardous materials.

Several ongoing projects in materials research and development also show promise for deployment. These projects, involving a host of university laboratories, study ways to improve technologies that will help prevent generation of hazardous wastes and improve energy efficiency in manufacturing processes.

For more information about the National Border Technology Partnership Program, visit the program's Web site at <http://www.border-tech.org>

## Students See Chemistry at Work

In November, the Department of Energy Grand Junction Office hosted twenty high school students at the Tuba City Uranium Mill Tailings Remedial Action Ground Water Site located on the Navajo Nation Reservation near Tuba City, Arizona. The students visited the site as part of their chemistry class.

The ground water at the former uranium mill processing site is contaminated, predominately with nitrate, uranium, molybdenum, selenium, and sulfate. Cleanup of the ground water is currently being performed with a pilot system that extracts the contaminated ground water, treats it, and injects clean water back into the aquifer.

The students toured the grounds, then donned safety glasses to view a demonstration test currently underway for the ion-exchange system. As the students soon found out, removing the contaminants from the ground water is not a one-step process. As at all DOE sites remediating ground water, the ground water goes through a series of treatments to remove different contaminants.

For more information, contact Audrey Berry at [aberry@doegipo.com](mailto:aberry@doegipo.com).

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